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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/524,801

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EXAMINER

RICE, ELISA M

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/524,801	<b>Applicant(s)</b> FUJIMATSU, TAKESHI	
	<b>Examiner</b> ELISA M. RICE	<b>Art Unit</b> 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-15, 17-23 and 25-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-15, 17-23, 25-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/26/2008 has been entered.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Umezawa (JP 2000-060825), Skaanning (US 7,385,716) and Ishizuka (JP 64-082185).

**Regarding claim 1**, Umezawa discloses an image input device comprising:

an image input part into which an image is entered (“The control part 2 of an iris recognizing device 1 obtains the still picture of an instant when a start switch 11 is depressed “, abstract);

an image evaluation part which evaluates image quality or subject of the image by using a predetermined threshold value (“The control part 2 performs access to the data group of the person to be recognized based on the inputted ID code of the person to be recognized and inquires the iris code.”, abstract);

a cause determination part which determines a cause of image degradation corresponding to the image, based on an evaluation result of the image by the image evaluation part evaluation part from a plurality of stored causes of image degradation (“That is, it is analyzed by which cause NG occurs and which kind of operation is required for the cancellation and the indication for urging the operation is displayed in a display part 4.”, abstract);

Umezawa does not disclose the following:

1) a question-cause correspondence table including the plurality of causes of image degradation and corresponding questions

2) an output part which outputs to a user a question including information corresponding to another cause of image degradation of the plurality of stored causes of image degradation based on the question-cause correspondence;

- 2) an answer input part into which an answer to the question is entered;
- 3) a cause determination part which determines whether a match occurs or not between the cause of image degradation and the cause of image degradation corresponding to the answer, wherein in a case where the cause determination part determines that the cause of image degradation and the cause of image degradation corresponding to the answer do not match with each other, the image evaluation part changes the predetermined threshold value used to evaluate the image so that the cause of image degradation and the cause of image degradation corresponding to the answer can match with each other.

However, Skaanning teaches a question-cause correspondence table including the plurality of causes of image degradation and corresponding questions (Skaanning, Table 6, see last four entries; Skanning, Table 4 and Table 3 further expand on the causes listed in Table 6), an output part which outputs to a user a question including information corresponding to another cause of image degradation of the plurality of stored causes of image degradation based on the question-cause correspondence (Skaanning, column 5, lines 32- 44); an answer input part into which an answer to the question is entered (Skaanning, Fig. 12, num. 122); and a cause determination part which determines whether a match occurs or not between the cause of image degradation and the cause of image degradation corresponding to the answer (Skaanning, Fig. 16. "Explanation editor for causes, actions and questions", Skaanning, column 12, lines 41-48; Skaanning, column 12, lines 53-55)

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Umezawa and Skaanning are in the same field of endeavor of diagnostic systems. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Iris recognition system of Umezawa with Skaanning's interactive diagnostic system wherein a diagnosis is refined using questions directed to the user in order to allow "efficient belief updating" and "troubleshooting" (Skaanning, column 3, lines 28-30; Skaanning, column 4, lines 49-54).

The combination of Umezawa and Skaanning does not disclose the following:

wherein in a case where the cause determination part determines that the cause of image degradation and the cause of image degradation corresponding to the answer do not match with each other, the image evaluation part changes the predetermined threshold value used to evaluate the image so that the cause of image degradation and the cause of image degradation corresponding to the answer can match with each other.

However, Ishizuka teaches wherein changes are made to the predetermined threshold value used to evaluate the image so that the results can match with each other ("An update value about the reject value 2 is calculated based on the result information of a decision result input part 4 to input the decision result information of whether the information of this standard pattern is correct.", Ishizuka, abstract)

It would have been obvious to one of ordinary skill in the art to modify the invention of the combination of Umezawa and Skaanning to change the threshold value used in making its cause determinations because according to Ishizuka in the abstract

“since the reject value is updated in accordance with the state of the false recognition about the respective standard patterns, the false recognitions can be reduced”  
(Ishizuka, abstract).

Claims 2, 3, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umezawa (JP 2000-060825), Skaanning (US 7,385,716) and Ishizuka (JP 64-082185), futher in view of Kondo (US 7,130,453).

**Regarding claim 2**, the combination of Umezawa, Skaanning (US 7,385,716), and Ishizuka disclose the image input device according to claim 1, wherein the image evaluation part comprises:

a degree-of-focusing determination part which determines whether a degree of focusing of the image is within a second threshold range or not ( “ In case the profile of a line is started, such a judgment can be performed when a control section 2 detects whether it is that the difference in the contrast value of a part with the deep color of a static image and a light part has become beyond a predetermined value.”, Umezawa, “Detailed Description”, paragraph 34) ;

a subject detection part which detects a presence or absence of an area which is assumed to be the subject of the image (The above (4) is judged when the eyes of the

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identified person in the static image of the eyes of an identified person are in the location from which it separated from the center of a screen. Such a judgment can be performed by detecting a dark-eyed part (part with the lowest brightness) out of a static image, and detecting whether it is that the location is settled near the center of a screen (the field is appointed beforehand,” Umezawa, “Detailed Description”, paragraph 36);

and a high intensity area detection part which detects a presence or absence of a high intensity area exceeding a third threshold range from the image (“The above (3) is judged when an unusually high (bright) part has brightness in the iris of the eye in the static image of the eyes of an identified person. Such a judgment can be performed by detecting a dark-eyed part (part with the lowest brightness) out of a static image, and detecting whether it is that there is a part bright beyond the predetermined value beforehand defined into it.”, Umezawa, “Detailed Description”, paragraph 35)

The combination of Umezawa, Skaanning (US 7,385,716) and Ishizuka does not disclose an intensity determination part which determines whether intensity of the image is within a first threshold range or not.

However, Kondo does teach an intensity determination part which determines whether intensity of the image is within a first threshold range or not (“If the average brightness is greater than the threshold, no contrast correction is performed.”, Kondo, paragraph 76)

It would have been obvious to one of ordinary skill in the art to modify the invention of the combination of Umezawa, Skaanning (US 7,385,716), and Ishizuka to



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include an intensity determination part which determines whether intensity of the image is within a first threshold range or not as taught by Kondo in order to determine whether the brightness of the image is suitable or if a different level of illumination must be applied to the subject in a retake image (brightness correction).

**Regarding claim 3**, the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, and Kondo discloses the image input device according to claim 2, wherein the cause determination part determines that the cause of image degradation is reflection due to external light when:

the intensity determination part determines that the intensity of the image is within the first threshold range; the degree-of-focusing determination part determines that the degree of focusing of the image is within the second threshold range; the subject detection part detects the area which is assumed to be the subject of the image;

and the high intensity area detection part determines that there is no area exceeding the third threshold range in the image. (“(3) Reflection of lighting is reflected in the iris,”

Umezawa, paragraph 32, “The above (3) is judged when an unusually high (bright) part has brightness in the iris of the eye in the static image of the eyes of an identified person. Such a judgment can be performed by detecting a dark-eyed part (part with the lowest brightness) out of a static image, and detecting whether it is that there is a part bright beyond the predetermined value beforehand defined into it.”, Umezawa, “Detailed

Description”, paragraph 35;) According to the Umezawa reference, in the particular circumstance where the intensity determination part determines that the intensity of the image is within the first threshold range, the degree-of-focusing determination part determines that the degree of focusing of the image is within the second threshold range, the subject detection part detects the area which is assumed to be the subject of the image, but the high intensity area detection part determines that there is no area exceeding the third threshold range in the image, the cause determination part would determine that the cause of image degradation is reflection due to external light (Umezawa, paragraph 32 to 36).

**Regarding claim 4**, the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka and Kondo teaches the image input device according to claim 3, wherein when the cause determination part determines that the cause of image degradation and the cause of image degradation corresponding to the answer do not match with each other, the image evaluation part changes one of the first threshold range, the second threshold range and the third threshold range (“An update value about the reject value 2 is calculated based on the result information of a decision result input part 4 to input the decision result information of whether the information of this standard pattern is correct.”, Ishizuka, abstract).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Umezawa (JP 2000-060825) , Skaanning (US 7,385,716) and Ishizuka (JP 64-082185), further in view of Matsushita (JP 10-005195).

**Regarding claim 5**, while the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka discloses the image input device according to claim 1, the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka does not disclose further comprising:

an irradiation part which irradiates the subject (lighting part 13; applying light on the eyeball, Matsushita, abstract);

and an irradiation output control part which controls an output of the irradiation part (“a lighting part 13 provided with a lighting array part 13b applies irradiation light by an instruction from a control part 12 and only the light reflected by a lens, etc., of the eyeball and glasses out of the reflected lights is inputted in a reflection part 15.”, Matsushita, abstract).

wherein when the cause determination part determines that the cause of image degradation is reflection due to the external light, the irradiation output control part increases the output of the irradiation part (“To reduce noise caused by irregular reflection of a lens of glasses by applying light on the eyeball so as to photograph an image of the eyeball by the light reflected against the eyeball”, abstract, Matsushita).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka to include an irradiation part which corrects reflection issues in order “to reduce noise caused by irregular reflection of a lens of glasses” (Matsushita, abstract) because as Matsushita states in paragraph 4, “since 100t of reflected lights by lens 100s of these

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glasses etc. serves as a noise for the image of the iris, it becomes difficult to extract the pattern of the good iris” and “if the pattern of the iris is acquired from the image of the poor iris and it identifies based on the pattern of the iris, the precision of discernment will be worsened or it will become discernment impossible.”

Claim 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umezawa (JP 2000-060825) , Skaanning (US 7,385,716) and Ishizuka (JP 64-082185), further in view of Uchida (US 6,980, 669).

**Regarding claim 7**, the combination of Umezawa, Skaanning (US 7,385,716), and Ishizuka discloses an authentication device comprising: an image input device according to claim 1; and an authentication process part which performs an authentication process by generating authentication information from an image outputted from the image input device, and by comparing the authentication information with registered authentication information previously registered (“And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).”, Umezawa, paragraph 7; “The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [ with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code ] (step 26). When a judgment result is O.K. (i.e., when it is judged

that it has the conspicuity which is like [ with possible individual recognition ],”  
Umezawa, paragraph 8).

The combination of Umezawa, Skaanning (US 7,385,716), and Ishizuka do not disclose wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device. In the combination of Umezawa, Skaanning (US 7,385,716), and Ishizuka, image evaluation is performed if the authentication process fails.

However, Uchida teaches wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device (Uchida, Fig. 2, S5; Fig. 3)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of the combination of Umezawa, Skaanning (US 7,385,716), and Ishizuka to perform the authentication process after the image evaluation part has determined that the image is of suitable quality because as Uchida states in column 9, lines 32 to 35, “When the user inputs a fingerprint of such a low quality as just described, conventionally a method is usually employed wherein it is determined that “authentication by an automatic verification process is impossible.” Obviously, if a bad image is captured (e.g. one with bad image quality) is captured, there is no mechanism to preclude the poor image from being processed because conventional biometric devices merely act as a conduit in transferring information to the computer regardless of its quality. As a result, processing time of the computer and bandwidth associated with

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the signal line are wasted because user authentication or identification is virtually guaranteed to fail when processing a bad image.

**Regarding claim 8**, the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, and Uchida discloses the authentication device according to claim 7,

wherein the image is an eye image of a user to be authenticated (“when the image considered that the iris code suitable for identification is acquirable is displayed looking at the dynamic image of the face (especially perimeter of an eye), “ Umezawa, paragraph 7);

the authentication process part comprises: an authentication information generation part which generates the authentication information by encoding an iris area contained in the eye image (“And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).”, Umezawa, paragraph 7);

a storage part which stores the registered authentication information previously registered (Umezawa, paragraph 4);

and a comparison and collation part which compares and collates the registered authentication information stored in the storage part with the authentication information generated by the authentication information generation part (“The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [ with individual

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recognition possible for this iris code as compared with a standard pattern in the generated iris code ] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [ with possible individual recognition ],” Umezawa, paragraph 8).

Claims 9, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umezawa (JP 2000-060825), Skaanning (US 7,385,716) and Ishizuka (JP 64-082185), futher Kondo (US 7,130,453), further in view of Matsushita (JP 10-005195).

**Regarding claim 9**, while the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, and Kondo discloses the image input device according to claim 2, the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, and Kondo does not disclose further comprising: an irradiation part which irradiates the subject; and an irradiation output control part which controls an output of the irradiation part, wherein when the cause determination part determines that the cause of image degradation is reflection due to the external light, the irradiation output control part increases the output of the irradiation part.

However, Matsushita teaches an irradiation part which irradiates the subject (lighting part 13; applying light on the eyeball, Matsushita, abstract);

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and an irradiation output control part which controls an output of the irradiation part (“a lighting part 13 provided with a lighting array part 13b applies irradiation light by an instruction from a control part 12 and only the light reflected by a lens, etc., of the eyeball and glasses out of the reflected lights is inputted in a reflection part 15.”, Matsushita, abstract).

wherein when the cause determination part determines that the cause of image degradation is reflection due to the external light, the irradiation output control part increases the output of the irradiation part (“To reduce noise caused by irregular reflection of a lens of glasses by applying light on the eyeball so as to photograph an image of the eyeball by the light reflected against the eyeball”, abstract, Matsushita).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, and Kondo to include an irradiation part which corrects reflection issues in order “to reduce noise caused by irregular reflection of a lens of glasses” (Matsushita, abstract) because as Matsushita states in paragraph 4, “since 100t of reflected lights by lens 100s of these glasses etc. serves as a noise for the image of the iris, it becomes difficult to extract the pattern of the good iris” and “if the pattern of the iris is acquired from the image of the poor iris and it identifies based on the pattern of the iris, the precision of discernment will be worsened or it will become discernment impossible.”



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**Regarding claim 10**, while the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, and Kondo discloses the image input device according to claim 3, the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, and Kondo does not disclose further comprising: an irradiation part which irradiates the subject; and an irradiation output control part which controls an output of the irradiation part, wherein when the cause determination part determines that the cause of image degradation is reflection due to the external light, the irradiation output control part increases the output of the irradiation part.

However, Matsushita teaches an irradiation part which irradiates the subject (lighting part 13; applying light on the eyeball, Matsushita, abstract);

and an irradiation output control part which controls an output of the irradiation part (“a lighting part 13 provided with a lighting array part 13b applies irradiation light by an instruction from a control part 12 and only the light reflected by a lens, etc., of the eyeball and glasses out of the reflected lights is inputted in a reflection part 15.”, Matsushita, abstract).

wherein when the cause determination part determines that the cause of image degradation is reflection due to the external light, the irradiation output control part increases the output of the irradiation part (“To reduce noise caused by irregular reflection of a lens of glasses by applying light on the eyeball so as to photograph an image of the eyeball by the light reflected against the eyeball”, abstract, Matsushita).

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It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, and Kondo to include an irradiation part which corrects reflection issues in order “to reduce noise caused by irregular reflection of a lens of glasses” (Matsushita, abstract) because as Matsushita states in paragraph 4, “since 100t of reflected lights by lens 100s of these glasses etc. serves as a noise for the image of the iris, it becomes difficult to extract the pattern of the good iris” and “if the pattern of the iris is acquired from the image of the poor iris and it identifies based on the pattern of the iris, the precision of discernment will be worsened or it will become discernment impossible.”

**Regarding claim 11**, while the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, and Kondo discloses the image input device according to claim 4, the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, and Kondo does not disclose further comprising: an irradiation part which irradiates the subject; and an irradiation output control part which controls an output of the irradiation part, wherein when the cause determination part determines that the cause of image degradation is reflection due to the external light, the irradiation output control part increases the output of the irradiation part.

However, Matsushita teaches an irradiation part which irradiates the subject (lighting part 13; applying light on the eyeball, Matsushita, abstract);

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and an irradiation output control part which controls an output of the irradiation part (“a lighting part 13 provided with a lighting array part 13b applies irradiation light by an instruction from a control part 12 and only the light reflected by a lens, etc., of the eyeball and glasses out of the reflected lights is inputted in a reflection part 15.”, Matsushita, abstract).

wherein when the cause determination part determines that the cause of image degradation is reflection due to the external light, the irradiation output control part increases the output of the irradiation part (“To reduce noise caused by irregular reflection of a lens of glasses by applying light on the eyeball so as to photograph an image of the eyeball by the light reflected against the eyeball”, abstract, Matsushita).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, and Kondo to include an irradiation part which corrects reflection issues in order “to reduce noise caused by irregular reflection of a lens of glasses” (Matsushita, abstract) because as Matsushita states in paragraph 4, “since 100t of reflected lights by lens 100s of these glasses etc. serves as a noise for the image of the iris, it becomes difficult to extract the pattern of the good iris” and “if the pattern of the iris is acquired from the image of the poor iris and it identifies based on the pattern of the iris, the precision of discernment will be worsened or it will become discernment impossible.”

Claims 12,13, 14, 20, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umezawa (JP 2000-060825), Skaanning (US 7,385,716) , Ishizuka (JP 64-082185) and Kondo (US 7,130,453), further in view of Uchida (US 6,980, 669).

**Regarding claim 12**, the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, and Kondo discloses an authentication device comprising: an image input device according to claim 2; and an authentication process part which performs an authentication process by generating authentication information from an image outputted from the image input device, and by comparing the authentication information with registered authentication information previously registered (“And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).”, Umezawa, paragraph 7; “The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [ with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code ] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [ with possible individual recognition ],” Umezawa, paragraph 8).

The combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, and Kondo do not disclose wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input

device. In the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, and Kondo, image evaluation is performed if the authentication process fails.

However, Uchida teaches wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device (Uchida, Fig. 2, S5; Fig. 3)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, and Kondo to perform the authentication process after the image evaluation part has determined that the image is of suitable quality because as Uchida states in column 9, lines 32 to 35, "When the user inputs a fingerprint of such a low quality as just described, conventionally a method is usually employed wherein it is determined that "authentication by an automatic verification process is impossible." Obviously, if a bad image is captured (e.g. one with bad image quality) is captured, there is no mechanism to preclude the poor image from being processed because conventional biometric devices merely act as a conduit in transferring information to the computer regardless of its quality. As a result, processing time of the computer and bandwidth associated with the signal line are wasted because user authentication or identification is virtually guaranteed to fail when processing a bad image.

**Regarding claim 13**, the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, and Kondo discloses an authentication device comprising: an image input

device according to claim 3; and an authentication process part which performs an authentication process by generating authentication information from an image outputted from the image input device, and by comparing the authentication information with registered authentication information previously registered (“And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).”, Umezawa, paragraph 7; “The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [ with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code ] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [ with possible individual recognition ],” Umezawa, paragraph 8).

The combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, and Kondo do not disclose wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device. In the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, and Kondo, image evaluation is performed if the authentication process fails.

However, Uchida teaches wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device (Uchida, Fig. 2, S5; Fig. 3) .

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of the combination of Umezawa, Skaanning (US 7,385,716),

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Ishizuka, and Kondo to perform the authentication process after the image evaluation part has determined that the image is of suitable quality because as Uchida states in column 9, lines 32 to 35, "When the user inputs a fingerprint of such a low quality as just described, conventionally a method is usually employed wherein it is determined that "authentication by an automatic verification process is impossible." Obviously, if a bad image is captured (e.g. one with bad image quality) is captured, there is no mechanism to preclude the poor image from being processed because conventional biometric devices merely act as a conduit in transferring information to the computer regardless of its quality. As a result, processing time of the computer and bandwidth associated with the signal line are wasted because user authentication or identification is virtually guaranteed to fail when processing a bad image.

**Regarding claim 14**, the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, and Kondo disclose an authentication device comprising: an image input device according to claim 4; and an authentication process part which performs an authentication process by generating authentication information from an image outputted from the image input device, and by comparing the authentication information with registered authentication information previously registered ("And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).", Umezawa, paragraph 7; "The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [ with individual recognition possible for this iris code as compared with a standard pattern in the

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generated iris code ] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [ with possible individual recognition ],” Umezawa, paragraph 8).

The combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, and Kondo do not disclose wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device. In the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, and Kondo, image evaluation is performed if the authentication process fails.

However, Uchida teaches wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device (Uchida, Fig. 2, S5; Fig. 3)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, and Kondo to perform the authentication process after the image evaluation part has determined that the image is of suitable quality because as Uchida states in column 9, lines 32 to 35, “When the user inputs a fingerprint of such a low quality as just described, conventionally a method is usually employed wherein it is determined that “authentication by an automatic verification process is impossible.” Obviously, if a bad image is captured (e.g. one with bad image quality) is captured, there is no mechanism to preclude the poor image from being processed because conventional biometric devices merely act as a conduit in transferring information to the computer regardless of



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its quality. As a result, processing time of the computer and bandwidth associated with the signal line are wasted because user authentication or identification is virtually guaranteed to fail when processing a bad image.

**Regarding claim 20**, the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, and Kondo disclose the authentication device according to claim 12, wherein the image is an eye image of a user to be authenticated (“when the image considered that the iris code suitable for identification is acquirable is displayed looking at the dynamic image of the face (especially perimeter of an eye), “ Umezawa, paragraph 7); the authentication process part comprises: an authentication information generation part which generates the authentication information by encoding an iris area contained in the eye image (“And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).”, Umezawa, paragraph 7); a storage part which stores the registered authentication information previously registered (Umezawa, paragraph 4); and a comparison and collation part which compares and collates the registered authentication information stored in the storage part with the authentication information generated by the authentication information generation part (“The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [ with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code ] (step 26). When a judgment result is O.K. (i.e., when it is judged

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that it has the conspicuity which is like [ with possible individual recognition ],”  
Umezawa, paragraph 8).

**Regarding claim 21**, the combination of Umezawa, Skaanning (US 7,385,716),

Ishizuka, and Kondo disclose the authentication device according to claim 13, wherein the image is an eye image of a user to be authenticated (“when the image considered that the iris code suitable for identification is acquirable is displayed looking at the dynamic image of the face (especially perimeter of an eye), “ Umezawa, paragraph 7);

the authentication process part comprises: an authentication information generation part which generates the authentication information by encoding an iris area contained in the eye image (“And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).”, Umezawa, paragraph 7);

a storage part which stores the registered authentication information previously registered (Umezawa, paragraph 4);

and a comparison and collation part which compares and collates the registered authentication information stored in the storage part with the authentication information generated by the authentication information generation part (“The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [ with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code ] (step 26). When a judgment result is O.K. (i.e., when it is judged

that it has the conspicuity which is like [ with possible individual recognition ],”  
Umezawa, paragraph 8).

**Regarding claim 22**, the combination of Umezawa, Skaanning (US 7,385,716),  
Ishizuka, Kondo, and Uchida disclose the authentication device according to claim 14,  
wherein the image is an eye image of a user to be authenticated (“when the image  
considered that the iris code suitable for identification is acquirable is displayed looking  
at the dynamic image of the face (especially perimeter of an eye), “ Umezawa,  
paragraph 7);

the authentication process part comprises: an authentication information generation part  
which generates the authentication information by encoding an iris area contained in the  
eye image (“And predetermined characteristic quantity is extracted and coded from the  
image of the cut-down iris, and an iris code is generated (step 25).”, Umezawa,  
paragraph 7);

a storage part which stores the registered authentication information previously  
registered (Umezawa, paragraph 4);

and a comparison and collation part which compares and collates the registered  
authentication information stored in the storage part with the authentication information  
generated by the authentication information generation part (“The control section 2 of  
this equipment 1 judges whether it is having the conspicuity which is like [ with individual  
recognition possible for this iris code as compared with a standard pattern in the

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generated iris code ] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [ with possible individual recognition ],” Umezawa, paragraph 8).

Claims 15 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umezawa (JP 2000-060825), Skaanning (US 7,385,716), Ishizuka (JP 64-082185), Matsushita (JP 10-005195), and Uchida (US 6,980, 669).

**Regarding claim 15**, the combination of Uchida, Skaanning (US 7,385,716), Ishizuka, Matsushita authentication device comprising: an image input device according to claim 5; and an authentication process part which performs an authentication process by generating authentication information from an image outputted from the image input device, and by comparing the authentication information with registered authentication information previously registered (“And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).”, Umezawa, paragraph 7; “The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [ with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code ] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [ with possible individual recognition ],” Umezawa, paragraph 8).

The combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, Kondo, and Matsushita do not disclose wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device. In the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, Kondo, and Matsushita image evaluation is performed if the authentication process fails.

However, Uchida teaches wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device (Uchida, Fig. 2, S5; Fig. 3)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, and Kondo to perform the authentication process after the image evaluation part has determined that the image is of suitable quality because as Uchida states in column 9, lines 32 to 35, "When the user inputs a fingerprint of such a low quality as just described, conventionally a method is usually employed wherein it is determined that "authentication by an automatic verification process is impossible." Obviously, if a bad image is captured (e.g. one with bad image quality) is captured, there is no mechanism to preclude the poor image from being processed because conventional biometric devices merely act as a conduit in transferring information to the computer regardless of its quality. As a result, processing time of the computer and bandwidth associated with the signal line are wasted because user authentication or identification is virtually guaranteed to fail when processing a bad image.

**Regarding claim 23**, the authentication device according to claim 15, wherein the image is an eye image of a user to be authenticated (“when the image considered that the iris code suitable for identification is acquirable is displayed looking at the dynamic image of the face (especially perimeter of an eye),” Umezawa, paragraph 7);

The authentication process part comprises: an authentication information generation part which generates the authentication information by encoding an iris area contained in the eye image (“And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).”, Umezawa, paragraph 7);

A storage part which stores the registered authentication information previously registered (Umezawa, paragraph 4);

And a comparison and collation part which compares and collates the registered authentication information stored in the storage part with the authentication information generated by the authentication information generation part (“The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [ with possible individual recognition],” Umezawa, paragraph 8).

Claims 17,18, 19, 25, 26, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umezawa (JP 2000-060825), Skaanning (US 7,385,716) , Ishizuka (JP 64-082185) and Kondo (US 7,130,453), Matsushita (JP 10-005195), and Uchida (US 6,980, 669).

**Regarding claim 17**, the combination of Umezwa, Skaanning (US 7,385,716), Ishizuka, Kondo, and Matsushita disclose an authentication device comprising: an image input device according to claim 9; and an authentication process part which performs an authentication process by generating authentication information from an image outputted from the image input device, and by comparing the authentication information with registered authentication information previously registered (“And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).”, Umezawa, paragraph 7; “The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [ with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code ] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [ with possible individual recognition ],” Umezawa, paragraph 8).

The combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, Kondo, and Matsushita do not disclose wherein the authentication process is performed by generating authentication information from an image outputted from an image

evaluation part of the image input device. In the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, and Kondo, image evaluation is performed if the authentication process fails.

However, Uchida teaches wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device (Uchida, Fig. 2, S5; Fig. 3)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, Kondo, and Matsushita to perform the authentication process after the image evaluation part has determined that the image is of suitable quality because as Uchida states in column 9, lines 32 to 35, "When the user inputs a fingerprint of such a low quality as just described, conventionally a method is usually employed wherein it is determined that "authentication by an automatic verification process is impossible." Obviously, if a bad image is captured (e.g. one with bad image quality) is captured, there is no mechanism to preclude the poor image from being processed because conventional biometric devices merely act as a conduit in transferring information to the computer regardless of its quality. As a result, processing time of the computer and bandwidth associated with the signal line are wasted because user authentication or identification is virtually guaranteed to fail when processing a bad image.



**Regarding claim 18**, the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, Kondo, Matsushita, An authentication device comprising: an image input device according to claim 10; and an authentication process part which performs an authentication process by generating authentication information from an image outputted from the image input device, and by comparing the authentication information with registered authentication information previously registered (“And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).”, Umezawa, paragraph 7; “The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [ with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code ] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [ with possible individual recognition ],” Umezawa, paragraph 8).

The combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, Kondo, and Matsushita do not disclose wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device. In the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, Kondo, and Matsushita disclose an image evaluation is performed if the authentication process fails.

However, Uchida teaches wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device (Uchida, Fig. 2, S5; Fig. 3)

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It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, Kondo, and Matsushita to perform the authentication process after the image evaluation part has determined that the image is of suitable quality as taught by Uchida because as Uchida states in column 9, lines 32 to 35, "When the user inputs a fingerprint of such a low quality as just described, conventionally a method is usually employed wherein it is determined that "authentication by an automatic verification process is impossible." Obviously, if a bad image is captured (e.g. one with bad image quality) is captured, there is no mechanism to preclude the poor image from being processed because conventional biometric devices merely act as a conduit in transferring information to the computer regardless of its quality. As a result, processing time of the computer and bandwidth associated with the signal line are wasted because user authentication or identification is virtually guaranteed to fail when processing a bad image.

**Regarding claim 19**, the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, Kondo, and Matsushita disclose an authentication device comprising: an image input device according to claim 11; and an authentication process part which performs an authentication process by generating authentication information from an image outputted from the image input device, and by comparing the authentication information with registered authentication information previously registered ("And predetermined characteristic quantity is extracted and coded from the image of the cut-

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down iris, and an iris code is generated (step 25).”, Umezawa, paragraph 7; “The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [ with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code ] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [ with possible individual recognition ],” Umezawa, paragraph 8).

The combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, Kondo, and Matsushita do not disclose wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device. In the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, Kondo, and Matsushita, the image evaluation is performed if the authentication process fails.

However, Uchida teaches wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device (Uchida, Fig. 2, S5; Fig. 3)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, Kondo, and Matsushita to perform the authentication process after the image evaluation part has determined that the image is of suitable quality because as Uchida states in column 9, lines 32 to 35, “When the user inputs a fingerprint of such a low quality as just described, conventionally a method is usually employed wherein it is

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determined that "authentication by an automatic verification process is impossible."

Obviously, if a bad image is captured (e.g. one with bad image quality) is captured, there is no mechanism to preclude the poor image from being processed because conventional biometric devices merely act as a conduit in transferring information to the computer regardless of its quality. As a result, processing time of the computer and bandwidth associated with the signal line are wasted because user authentication or identification is virtually guaranteed to fail when processing a bad image.

**Regarding claim 25**, the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, Kondo, Matsushita, and Uchida disclose the authentication device according to claim 17, wherein the image is an eye image of a user to be authenticated ("when the image considered that the iris code suitable for identification is acquirable is displayed looking at the dynamic image of the face (especially perimeter of an eye), " Umezawa, paragraph 7);

the authentication process part comprises: an authentication information generation part which generates the authentication information by encoding an iris area contained in the eye image ("And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).", Umezawa, paragraph 7);

a storage part which stores the registered authentication information previously registered (Umezawa, paragraph 4);

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and a comparison and collation part which compares and collates the registered authentication information stored in the storage part with the authentication information generated by the authentication information generation part ("The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [ with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code ] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [ with possible individual recognition ]," Umezawa, paragraph 8).

**Regarding claim 26**, the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, Kondo, Matsushita, and Uchida disclose the authentication device according to claim 18, wherein the image is an eye image of a user to be authenticated ("when the image considered that the iris code suitable for identification is acquirable is displayed looking at the dynamic image of the face (especially perimeter of an eye), " Umezawa, paragraph 7);

the authentication process part comprises: an authentication information generation part which generates the authentication information by encoding an iris area contained in the eye image ("And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).", Umezawa, paragraph 7);

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a storage part which stores the registered authentication information previously registered (Umezawa, paragraph 4);

and a comparison and collation part which compares and collates the registered authentication information stored in the storage part with the authentication information generated by the authentication information generation part ("The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [ with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code ] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [ with possible individual recognition ]," Umezawa, paragraph 8).

**Regarding claim 27**, the combination of Umezawa, Skaanning (US 7,385,716), Ishizuka, Kondo, Matsushita, and Uchida disclose the authentication device according to claim 19, wherein the image is an eye image of a user to be authenticated ("when the image considered that the iris code suitable for identification is acquirable is displayed looking at the dynamic image of the face (especially perimeter of an eye), " Umezawa, paragraph 7);

the authentication process part comprises: an authentication information generation part which generates the authentication information by encoding an iris area contained in the

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eye image ("And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).", Umezawa, paragraph 7);

a storage part which stores the registered authentication information previously registered (Umezawa, paragraph 4);

and a comparison and collation part which compares and collates the registered authentication information stored in the storage part with the authentication information generated by the authentication information generation part ("The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [ with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code ] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [ with possible individual recognition ]," Umezawa, paragraph 8).

### ***Response to Arguments***

Applicant's arguments with respect to claims 1 has been considered but is moot since it is directed to newly proposed changes made moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELISA M. RICE whose telephone number is (571)270-1582. The examiner can normally be reached on 12:00-8:30p.m. EST Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on (571)272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elisa M Rice/  
Examiner, Art Unit 2624

/Vikkram Bali/  
Supervisory Patent Examiner, Art Unit 2624